

## What is claimed is: (revised)

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1. <sup>an inner</sup> Gas-turbine combustion chamber with at least one, separate pilot zone (20) associated with a pilot burner (2) and with at least one, common main or dilution zone (30) associated with a main burner (3) which are axially and radially offset relative to each other, said common main or dilution zone (30) comprising an outer flame-tube wall (4) and an inner flame-tube wall (5) each provided with ports for the introduction of air, with said main burner (3) being arranged at the outer flame-tube wall (4) and with said pilot burner (2) being arranged at the inner flame-tube wall (5), characterized in that the outer-flame tube wall (4) is provided with a first arrangement (6) of single-row ports of the common main and dilution zone (30) and in that the inner flame-tube wall (5) is provided with a second arrangement (7) of single-row ports, with the ports (11) being located either on-center or off-center of the interspace of the first row of ports (8) of the first arrangement (6) of the outer flame-tube wall (4).
2. Gas turbine combustion chamber in accordance with Claim 1, characterized in that the first arrangement (6) of ports is provided as double row, with the ports (9) of the second row being located either on-center or off-center and rearwards of the interspace of the ports (8) of the first row.
- Sub A1* 3. Gas-turbine combustion chamber in accordance with one of the preceding Claims 1 to 2, characterized in that the second arrangement (7) of ports on the inner flame-tube wall (5) is provided as double row, with the ports (12) of the first row being located either on-center or off-



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center of the interspaces of the first row of ports (8) of the first arrangement (6) and with the ports (13) of the second row being located on-center or off-center of the interspaces of the first row of ports (9) of the first arrangement (6).

4. Gas-turbine combustion chamber in accordance with one of the preceding Claims 1 to 3, characterized in that the following relationships are satisfied by the distance  $t_1$  of the centers of the ports (8) of the first row and by the distance  $t_2$  of the centers of the ports (9) of the second row of the first arrangement (6) in the outer flame-tube wall (4) from an upstream wall (14) of a flame tube (15) of the main burner (3) (main burner exit plane) to the height  $h$  of the flame tube (15):

$t_1/h = 0.4$  (minimum distance),

$t_2/h = 1.2$  (maximum distance).

5. Gas-turbine combustion chamber in accordance with one of the preceding Claims 1 to 4, characterized in that the ports (8 to 13) are circular.
6. Gas-turbine combustion chamber in accordance with one of the Claims 1 to 5, characterized in that the ports (8 to 13) are non-circular.
7. Gas-turbine combustion chamber in accordance with one of the preceding Claims 1 to 6, characterized in that the ports (8 to 13) are plain holes.
8. Gas-turbine combustion chamber in accordance with one of the Claims 1 to 7, characterized in that the ports (8 to 13) are plunged holes with a



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- small rim (16) extending into the combustion chamber (1).
9. Gas-turbine combustion chamber in accordance with one of the Claims 1 to 7, characterized in that the ports (8 to 13) are provided with a tubular chute (17) extending into the combustion chamber (1).
  10. Gas-turbine combustion chamber in accordance with one of the preceding Claims 1 to 9, characterized in that the exit axes of the ports (11, 12, 13) of the inner flame-tube wall (5) are set such that they meet an area of the combustion chamber which is confined by the intersection (A) of the main burner axis (18) with the main burner exit plane (19) and the intersection (C) of the axis of the arrangement (6) of the ports (8, 9, 10) with the outer flame-tube wall (4).
  11. Gas-turbine combustion chamber in accordance with one of the Claims 1 to 10, characterized in that the diameter  $d$  of the ports (8-10; 11-13) lies in a range of  $0.12 \leq d/h \leq 0.3$ , where  $h$  is the flame-tube height of the main burner.

